

**U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON SCIENCE**

**SUBCOMMITTEE ON ENERGY**

**HEARING CHARTER**

*Priorities in the Department of Energy Budget for Fiscal Year 2005*

**Wednesday, March 24, 2004**

**10:00 am – noon**

**2318 Rayburn House Office Building**

**1. Purpose**

On Wednesday, March 24, 2004, the Energy Subcommittee of the House Science Committee will hold a hearing on the Department of Energy's fiscal year 2005 budget request. Five Department of Energy (DOE) witnesses will review the proposed research and development (R&D) budgets and clarify the President's energy-related science and technology priorities.

**2. Witnesses**

- **Dr. James Decker** is the Principal Deputy Director of the Office of Science (SC) at DOE. He has held this position since 1985, and has concurrently served as Acting Director on five separate occasions. Prior to joining DOE in 1973, Dr. Decker was a physicist at Bell Telephone [AT&T Bell] Laboratories.
- **Mr. David Garman** is the Assistant Secretary for Energy Efficiency and Renewable Energy (EERE) at DOE. Previously, Mr. Garman served as Chief of Staff to former Senator Frank Murkowski and has served on the professional staff of the Senate Energy and Natural Resources Committee and the Senate Select Committee on Intelligence.
- **Mr. Mark R. Maddox** is the Acting Assistant Secretary for Fossil Energy (FE) at DOE. Prior to joining FE, Mr. Maddox served as senior policy advisor to the Secretary of Energy. Prior to coming to DOE in 2003, Mr. Maddox was director of communications and public affairs for a division of Lockheed Martin, Inc. that is now called Affiliated Computer Services State and Local Solutions, Inc.
- **Mr. William D. Magwood, IV** is the Director of the Office of Nuclear Energy, Science and Technology (NE) at DOE. Prior to joining DOE in 1994, Mr. Magwood held technology management positions with two energy-related organizations: Edison Electric Institute and Westinghouse Electric Corporation.
- **Mr. James W. Glotfelty** is the Director of the U.S. Department of Energy's Office of Electric Transmission and Distribution (OETD). Previously, Mr. Glotfelty served as a senior advisor to the Secretary of Energy, where he was a co-leader in the Department's contribution to the President's *National Energy Policy*. Mr. Glotfelty also served as an advisor on electricity to then-Governor Bush.

### 3. Overarching Questions

- How is the White House guidance to science and technology agencies reflected in the activities funded by the Department of Energy's (DOE) budget? In particular, does the DOE budget reflect the emphasis on long-term, high-risk activities that the Administration has stressed in its guidance to agencies?
- The Office of Management and Budget is applying new evaluation techniques to decide how well agency programs are working. Are programs being evaluated properly and do program budgets reflect the evaluations?
- In addition, there are a series of program-specific concerns that the Committee would like to explore. See the Questions to Witnesses in Section 5.

### 4. Background and Issues

(Background and issues are presented for DOE as a whole and then for each of the programs on which the hearing will focus.)

#### A) OVERALL DOE R&D

#### **BACKGROUND:**

The Five DOE Civilian R&D Offices: The \$5.2 billion DOE R&D request is divided among the five offices represented at this hearing: The Office of Science (SC) funds basic research at universities and 10 national laboratories. The Office of Science contributes over 40 percent of the Federal funds for civilian physical sciences research. The other four offices – Energy Efficiency and Renewable Energy (EERE), Fossil Energy (FE), Nuclear Energy Science and Technology (NE) and Electric Transmission and Distribution (TD) – run applied R&D programs.

U.S. Energy Context: The applied energy R&D request of \$1.9 billion represents 3.25 percent of the civilian science and technology budget<sup>1</sup>. The research is designed to affect the energy sector of the economy, which constituted 7.2 percent of the gross domestic product (GDP) in 2002.<sup>2</sup> Energy may have an even larger influence on policy than its direct economic impact, due to its implications for foreign policy, and because virtually every other product or service in the economy requires some input of energy for its production and/or delivery.

DOE R&D in Budget Context: The President is proposing to spend \$55.3 billion on all civilian research and development (R&D) in the fiscal year (FY) 2005 budget, or about 2.3 percent of the total proposed \$2.4 trillion budget<sup>3</sup>. Of the amount proposed for total civilian R&D, 9.4 percent would go to DOE. Table 1 on the next page breaks down the proposed DOE R&D budget.

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<sup>1</sup> Not including Department of Homeland Security funding.

<sup>2</sup> Numerator (energy expenditure) from the EIA's Annual Energy Review 2002 Table 3.4 on page 77. Denominator (GDP) from the year 2002 data in the President's 2005 Budget: *Historical Tables*, page 184.

<sup>3</sup> To calculate civilian R&D the Committee begin with the Federal Science and Technology (FS&T) budget (*Analytical Perspectives*, p. 61) and subtracted defense basic and applied research. These FS&T tables did not include any research in the Department of Homeland Security.

**Table 1.** Fiscal Year 2004 and Fiscal Year 2005 Funding for DOE Non-Defense R&D

Account	FY04 appropriation (in millions) *	FY05 Request (in millions)	Percentage Change from FY04 Level
Science	\$3,500	\$3,432	-2.0%
EERE R&D	\$964	\$919	-4.7%
Energy Conservation R&D	\$607	\$544	-10.4%
Renewable Energy Resources	\$357	\$375	5.0%
Fossil Energy			
FE R&D	\$673	\$636	-5.5%
Clean Coal Account**	-\$98	-\$140	-
Nuclear Energy R&D	\$293	\$300	2.4%
Electric Transm. & Dist.	\$81	\$91	12.3%
<b>Total</b>	<b>\$5,413</b>	<b>\$5,238</b>	<b>-3.3%</b>

\* The figures in this chart are appropriated amounts for FY 04. The Administration sometimes excludes appropriations for earmarks from the FY 04 base, resulting in higher percentage changes from FY 04 to FY 05 than are shown here.

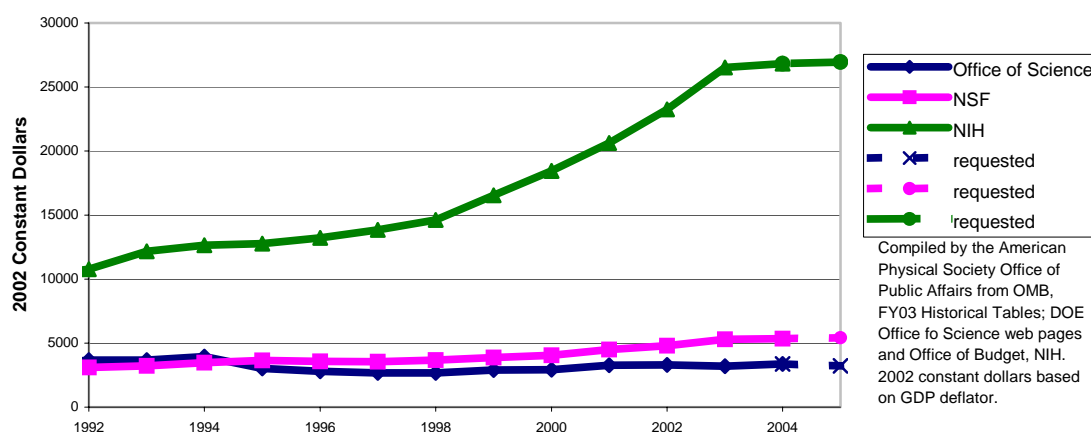
\*\*The Clean Coal Technology Account has not received new budget authority since the early 1990s. Balances remaining in the fund from abandoned projects have been transferred in recent years to the Fossil Energy R&D account to fund similar demonstration activities. Summing these accounts distorts the programmatic effect of the transfers.

**Source:** President's Fiscal Year 2005 Budget Request: *Analytical Perspectives* page 61, and DOE FY 05 Congressional Budget Request.

## ISSUES:

**Does the proposed budget strike the appropriate balance between the physical sciences and the life sciences?:** Life science research at the National Institutes of Health (NIH) has more than doubled over the past decade, while research in the physical sciences has remained flat (see Figure 1). Is this the correct balance between life sciences and physical sciences? The largest percentage of federal non-defense physical sciences research funds come through DOE.

### Office of Science, NSF, and NIH



**Figure 1:** Past Decade of Funding History for DOE Office of Science, NSF and NIH.

Source: American Physical Society

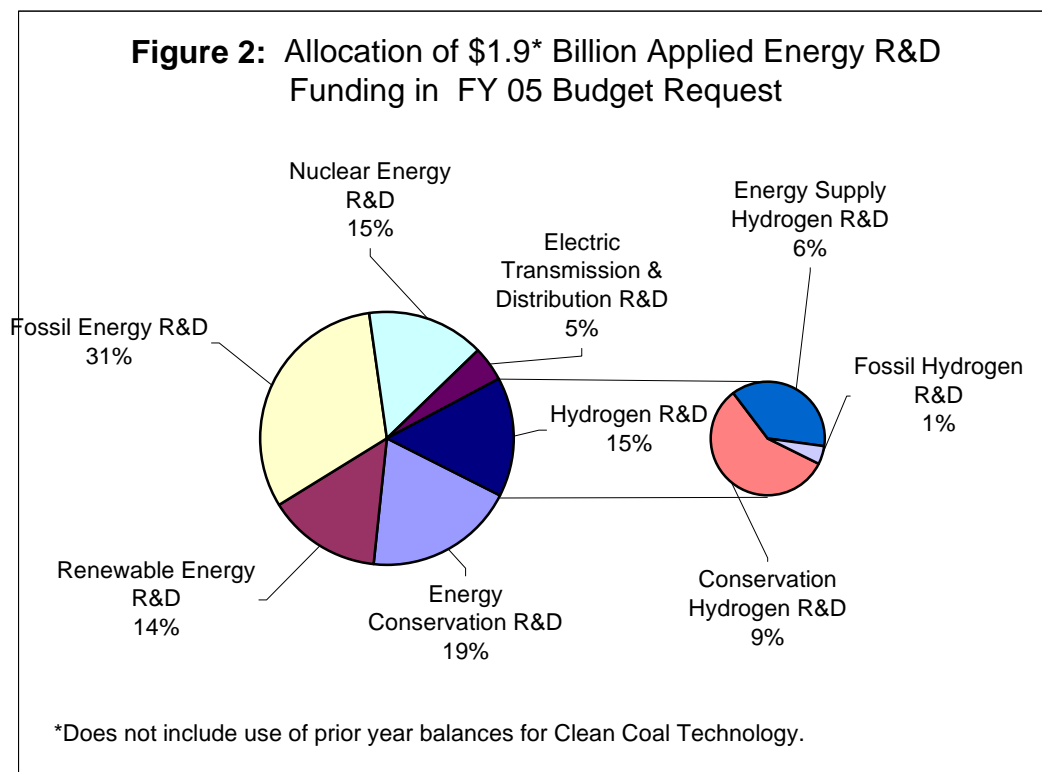
**Will a proposed change in budget scoring endanger funding for R&D?** The proposed budget would change funding for the Yucca Mountain nuclear waste disposal facility from discretionary to mandatory spending. If Congress fails to approve this change – and Senate approval is unlikely given the controversy about Yucca Mountain – then \$750 million will have to be cut from proposed discretionary spending in the Energy and Water appropriations to make up the difference.

**Does the proposed budget over-emphasize demonstration projects at the expense of basic and applied research?** In its FY 05 guidance to federal science agencies, the White House indicated that federal R&D programs should emphasize high-risk, long-term research. Yet DOE's FY 05 budget request appears to emphasize demonstration programs, which are inherently more expensive than research. For example, within the Office of Fossil Energy, funds are shifted from more fundamental research on coal to fund a large demonstration project.

**How is the Program Assessment and Rating Tool (PART) affecting budget decisions?** The Office of Management and Budget created the PART to better evaluate programs. But programs with poor evaluations do not always fare poorly in the budget proposal and programs that score well are not always well funded. (See the PART discussion in each of the sections below.)

**Does the proposed budget reflect a reduced commitment to climate change technology?** In the past, the Bush Administration has included in its budget request a specific funding amount for the Climate Change Technology Program, which was being led by DOE. The FY 05 proposal does not break out the program. Meanwhile, the Committee is still awaiting receipt of a strategic plan for the existing Climate Change Technology Program, which was due last summer.

**Does the proposed budget strike the appropriate balance among applied energy programs?** The proposed budget reflects a continuing shift in emphasis away from energy efficiency R&D. Assuming the budget proposal is approved, since FY 01, Fossil Energy R&D will have increased by 35 percent, and Renewable Energy R&D, including much of the Hydrogen fuel initiative, by



20 percent. Nuclear Energy, including shifts related to new laboratory costs, will have increased by 8.3 percent. Energy Efficiency R&D will have declined by 12 percent.

## **B) OFFICE OF SCIENCE**

### **BACKGROUND:**

Budget Highlights: Science at DOE is cut by about \$68 million compared to the FY04 enacted level, bringing the total down to about \$3.4 billion. The Administration describes this as a 2 percent increase, if one excludes Congressional earmarks. In passing the Energy Bill, H.R. 6, the House authorized \$4.2 billion for the Office for FY 05.

The largest increase would go to Basic Energy Sciences, up \$53 million (5.2 percent) including \$29 million associated with the Hydrogen Initiative. The largest decrease would go to Biological and Environmental Research, where the Department shaved \$140 million in earmarks.

PART: Office of Science programs have generally scored well recently on evaluations with the PART, receiving ratings of “moderately effective” and “effective.” This has not led, however, to significant increases in funding.

Focus On Long-Term, High-Risk: As a source of funds for basic research, the activities in the Office of Science are inherently long-term and high-risk.

### **ISSUES:**

**Would the proposal to initiate several new projects make the Office of Science budget unsustainable over the long run?** The FY 05 budget request includes several new starts – for U.S. participation in the international fusion experiment known as ITER, for the Linac Coherent Light Source, and for a Protein Production and Tags Facility. To complete these projects, funding for them will have to increase significantly in the out years. Unless the Office of Science receives significant budget increases in future years – which does not seem likely – these projects will eat into the budgets for ongoing programs. DOE has not explained how it will deal with this.

**Does the budget deal realistically with the need to update the infrastructure of the national laboratories?** The budget proposes to cut the Science Laboratories Infrastructure line nearly in half (-46.4 percent). The justification for the cut is that DOE will start leasing facilities built by others rather than laying out construction funds. But this raises questions about whether such buildings will be built for DOE needs rather than those of the contractor. Also, leasing arrangements save money up-front, but often cost more over the long run.

## **C) OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY**

### **BACKGROUND:**

Budget Highlights: While the proposed budget would increase overall funding for EERE by 1.4 percent (\$17.5 million), R&D funding would decline by 4.7 percent (-\$45 million). That’s because the largest increase in the account is for weatherization grants rather than R&D. The non-research programs, Weatherization and State Grants, are up \$61 million or 23 percent. The

Hydrogen R&D Initiatives, consisting of FreedomCAR and the Hydrogen Fuel Initiative, would also increase – by \$27 million or 12 percent.

**PART:** EERE programs were among the earliest in the federal government to be subject to the R&D criteria. All but one of EERE’s PART scores were “moderately effective,” with Building Technologies receiving an “adequate” rating.

**Focus On Long-Term, High-Risk:** The Science Committee held a hearing on March 3, 2004 on two recent reports, which recommended that the hydrogen efforts at DOE turn more attention to fundamental science questions. One report called the milestones in a key program “unrealistically aggressive,” and the other cautioned against premature demonstrations. For details, see the hearing charter and testimony:  
<http://www.house.gov/science/hearings/full04/index.htm>.

**Table 2: Science Committee Analysis of Efficiency and Renewable Energy Research and Development funding Trends.**

	<b>FY03 appropriation (in millions)</b>	<b>FY04 appropriation (in millions) *</b>	<b>FY05 Request (in millions)</b>	<b>\$ Change from FY04 Level</b>	<b>% Change from FY04 Level</b>
Office of EE and RE	\$1,202	\$1,235	\$1,251	\$18	1.4%
Weatherization and state grants	\$268	\$271	\$332	\$61	23.0%
EERE R&D	\$934	\$964	\$919	-\$45	-4.7%
Hydrogen and FreedomCAR	\$176	\$237	\$264	\$27	12.0%
EERE R&D other than H2 and FreedomCAR	<b>\$756</b>	<b>\$727</b>	<b>\$655</b>	<b>-\$72</b>	<b>-9.9%</b>

\* The figures in this chart include all appropriated amounts for FY 04. The Administration sometimes excludes appropriations for earmarks from the FY 04 base, resulting in higher percentage changes from FY 04 to FY 05 than are shown here. (See Appendix.)

## ISSUES:

### **Does the proposed budget achieve the appropriate balance among EERE programs?**

EERE funds a range of alternative technologies, including biomass, wind, solar and geothermal. In recent years, an increasing percentage of EERE funds have gone to the President’s Hydrogen Initiatives, including fuel and vehicle programs. This has limited funding for programs other than Hydrogen. In the FY 05 proposal, funding for EERE R&D programs other than the Hydrogen Initiatives would decline by almost 10 percent. However, this figure counts Congressional earmarks in the FY 04 base. If the earmarks are excluded, those programs still decline by about 1 percent. (See Appendix, Table 4.) Is this too great a loss in the base programs? Both the National Academy of Sciences and the American Physical Society in recent reports have noted that more R&D will be needed in alternative energy sources to help enable a hydrogen economy to reduce greenhouse gas emissions.

**D)**

## OFFICE OF FOSSIL ENERGY

### **BACKGROUND:**

Budget Highlights: The President's budget and the DOE budget documents present significantly different figures for Fossil Energy. The Committee has asked DOE to explain the disparities at this hearing. For example, the President's budget shows the President's Coal Research Initiative budget at \$635 million in the table, compared to \$287 million in the narrative description, and \$447 million in DOE documents.

The increased funding for the Clean Coal Power Initiative in the Fossil Energy budget appears to come at the expense of the stationary fuel cell program (Distributed Generation) cut by \$49 million (-68 percent), and other base coal programs. The budget does propose to rescind the funds for several Clean Coal projects that never got off the ground and to close the Clean Coal Technology account, moving most of the money to the base Fossil R&D program. This follows what the appropriators have been doing piecemeal for several years. Oil and gas programs are also cut by 57 percent (-\$20 million) and 39 percent (-\$17 million), but these two programs were among the few rated "ineffective" by the PART.

PART: FE PART scores vary from "adequate" for the coal programs to "ineffective" for the oil and gas programs. The oil and gas programs are among only a handful (only 0.1 percent of R&D) of all government programs rated as "ineffective" by the PART.

Focus On Long-Term, High-Risk: The FY05 budget emphasizes FutureGen, a large project to demonstrate carbon dioxide sequestration at a coal-fired power plant. While sequestration is a largely untested technology, demonstration projects usually are undertaken after risks are reduced. The emphasis on FutureGen raises the question of whether the project is a departure from the intention to focus R&D programs on "long-term, high risk" projects or whether FutureGen may be premature as a full-scale demonstration of sequestration before the risks are fully understood and addressed. (See more below.)

### **ISSUES:**

**Does the proposed budget emphasize demonstration projects at the expense of core research?** The budget request proposes to fund about half of the government share of the FutureGen project – \$237 million – of which just \$18 million will be expended in FY 05. The FutureGen demonstration project would build a new coal gasification power plant to experiment with the sequestration of carbon dioxide and the production of hydrogen. The Administration is also proposing a change from current law that, among other things, currently protect the government from cost overruns in clean coal projects.

## **E) OFFICE OF NUCLEAR ENERGY, SCIENCE AND TECHNOLOGY**

### **BACKGROUND:**

**Budget Highlights:** The budget proposes to increase funding for the Office of Nuclear Energy, Science and Technology (NE) by 2.2 percent, from \$293 million to \$300 million. However, the nuclear energy R&D budget lines would decline from \$130 million to \$96 million, with six programs being merged into four. The Advanced Fuel Cycle Initiative, a centerpiece of last year's budget, is cut from \$67 million to \$46 million.

**PART:** The NE ratings were mixed. The Advanced Fuel Cycle Initiative (AFCI) and the Generation IV Nuclear Energy Systems Initiatives each received a rating of "moderately effective," while the Nuclear Power 2010 (Nuclear Energy Technologies) program received a rating of "adequate." The Nuclear Energy Research Initiative (NERI) was determined to have "results not demonstrated."

**Focus On Long-Term, High-Risk:** The budget would reduce funding for one long-term program, the Advanced Fuel Cycle Initiative (AFCI), and merge another, the Nuclear Energy Research Initiative (NERI), into other programs. The AFCI develops technologies that can reduce the volume and long-term toxicity of high-level waste. NERI, which funds peer-reviewed nuclear research at universities, will reportedly be incorporated into existing programs. It is unclear, however, whether the merged effort would continue NERI's focus on fundamental research questions.

### **ISSUES:**

**Will the Office of Nuclear Energy's new responsibilities as the "landlord" of the Idaho National Laboratory reduce funding for other programs?** DOE decided in 2003 to change the way it managed what was then the Idaho National Engineering and Environmental Laboratory and the Argonne-West Laboratory, which was co-located with it. DOE merged the R&D programs of the two labs to create the new Idaho National Laboratory (INL). DOE made NE the "landlord" for INL, meaning the Office will have the responsibility of covering infrastructure and personnel costs related to the laboratory. Previously, those matters were the responsibility of DOE's Environmental Management program. The upshot of this change is that NE will have to cover \$33 million in costs formerly borne by Environmental Management. NE needed funds to cover these new costs, and partly as a result, NE's nuclear R&D budget lines would get a \$34 million, 26 percent cut in the FY 05 budget. DOE argues that at least some of the new costs related to INL will not recur because they will be used to make one-time payments to employees who were affected by the merger of the two laboratories.

## **F) OFFICE OF ELECTRIC TRANSMISSION AND DISTRIBUTION**

### **BACKGROUND:**

**Budget Highlights:** This Office, created in FY 04, would receive a \$10 million increase under the proposed budget -- half to R&D programs and half to program direction for personnel increases. The largest area of funding for the Office is the High Temperature Superconductivity (HTS) R&D program, which also would receive the largest increase, at +\$11 million (32 percent). Also seeing increases are two new initiatives, GridWise and GridWorks. These programs are focused on developing communications and control technologies along with advanced cables, switches,



and monitors to improve the transmission and distribution of electricity. Distribution R&D would be reduced, down \$9 million (-63 percent).

PART: HTS R&D was the only Office program evaluated; OMB rated it “moderately effective.”

Focus On Long-Term, High-Risk: In response to the blackout of August 14, 2003, this Office has dedicated additional effort to short-term congestion relief technologies.

## **ISSUES:**

**Will cuts to energy storage R&D have an adverse effect on other DOE programs?** The request for Energy Storage, received a large cut of \$5 million (-56 percent). Will this reduction cause a delay in commercialization of technologies being funded in other parts of DOE? The storage of energy is vital to emerging technologies such as wind, fuel cells, and solar-generated electricity. Such sources can only generate power intermittently (when the wind is blowing, for example), and they would be much more attractive if the energy they generate could be stored for later use. Before the Office was created, storage programs resided in EERE.

## **5. Witnesses Questions**

Witnesses have been asked to summarize the budget request for their offices focusing on activities identified as part of the Federal Science and Technology (FS&T) budget and specifically address the following issues:

### **Questions for Dr. Decker**

- The recently released Strategic Plan and the 20-Year Facilities Plan assume that the Office of Science will receive funding at levels in HR 6. Given that the fiscal year 2004 appropriation did not match that level, and the President’s request does not match the proposed authorization level for fiscal year 2005, how does the Office of Science plan to cope with these lower budget numbers?
- It is our understanding that negotiations are continuing on the location for the international fusion experiment. Please provide an update of on negotiations for the International Thermonuclear Experimental Reactor (ITER), and what the budget implications are likely to be if ITER negotiations collapse.
- The President’s Management Agenda (PMA) includes government-wide provisions on budget and performance integration that have been implemented through the Program Assessment and Rating Tool (PART) In addition, the PMA also introduced R&D Investment Criteria that were piloted in DOE’s applied R&D programs. Please provide examples of how you prepared data under these requirements, how those data were used for budget and management decisions, and how these activities dovetail with the Government Performance and Results Act of 1993.
- Using the definitions in OMB Circular A-11, what is the proposed mix of funding in the fiscal year 2005 budget request between basic research, applied research, development, demonstration, and deployment activities for your office? Please provide the comparable fiscal year 2004 numbers.

### **Questions for Mr. Garman**

- Please provide the fiscal year 2004 enacted level and the President's fiscal year 2005 request for the following programs individually:
  - Industrial Technologies Program
  - Biomass Program
  - Distributed Energy Program
  - Building Technologies Program
  - Solar Energy Technologies Program
  - Hydrogen, Fuel Cells and Infrastructure Technologies Program
  - Wind and Hydropower Technologies Program
  - Geothermal Technologies Program
  - Weatherization and Intergovernmental Program
  - Federal Energy Management Program
  - FreedomCAR and Vehicle Technologies Program
- This year's budget makes almost no mention of the Climate Change Technology Initiative. What has happened to this program, and why has the Administration decided to de-emphasize it?
- The President's Management Agenda (PMA) includes government-wide provisions on budget and performance integration, that has been implemented through the Program Assessment and Rating Tool (PART) In addition, the PMA also introduced R&D Investment Criteria that were piloted in DOE's applied R&D programs. Please provide examples of how you prepared data under these requirements, how those data were used for budget and management decisions, and how these activities dovetail with the Government Performance and Results Act of 1993.
- Using the definitions in OMB Circular A-11, what is the proposed mix of funding in the fiscal year 2005 budget request between basic research, applied research, development, demonstration, and deployment activities for your office? Please provide the comparable fiscal year 2004 numbers.

### **Questions for Mr. Maddox**

- Please clarify how the program authorization level totaling \$888 million in the President's budget request for fiscal year 2005 squares with a request for new budget authority of only \$636 million (p. 395 of the Appendix to Budget of the U.S. Government.) In addition, in the President's budget, the President's Coal Research Initiative shows a new obligation level of \$635 million, whereas the DOE fiscal year 2005 Budget Request shows the Initiative at the \$447 million level. Finally, the President's budget request shows a planned unobligated balance of \$602 million for the end of this fiscal year. What is the Department planning to spend on coal activities in fiscal year 2005 and how do unobligated balances factor into the spending plan?
- Given the importance of fuel cells to the hydrogen economy, please address why the department chose to reduce funding for distributed generation systems, including stationary fuel cells, by two thirds (\$48 million).
- The President's Management Agenda (PMA) includes government-wide provisions on budget and performance integration that have been implemented through the Program

Assessment and Rating Tool (PART). In addition, the PMA also introduced R&D Investment Criteria that were piloted in DOE's applied R&D programs. Please provide examples of how you prepared data under these requirements, how those data were used for budget and management decisions, and how these activities dovetail with the Government Performance and Results Act of 1993.

- Using the definitions in OMB Circular A-11, what is the proposed mix of funding in the fiscal year 2005 budget request between basic research, applied research, development, demonstration, and deployment activities for your office? Please provide the comparable fiscal year 2004 numbers.

#### **Questions for Mr. Magwood**

- The Department recently decided to split the Idaho National Engineering and Environmental Laboratory (INEEL) management contract into a clean-up portion (on-site nuclear waste clean-up project) and a research portion (a newly-redesignated laboratory for nuclear energy research Idaho National Laboratory (INL)). Please outline the Department's statutory authority to make this change and the Congressional consultation process that preceded it.
- Please detail Nuclear Energy Science and Technology program costs in fiscal year 2005 and out-years resulting from the transitioning of INEEL and ANL-West to INL. When the decision was made to split the contract at INEEL, did the department realize that some workers would not fit in the new structure? If so, please explain why the Department is responsible for paying transition costs to these workers and why those costs should come at the expense of nuclear energy R&D.
- The Department has proposed reclassification of \$750 million in funding for Yucca Mountain as offsetting collections, a change that requires statutory authorization. Please describe the consequences to the budget if this change is not enacted. In addition, please describe how any consequent delays in the construction of the Yucca Mountain waste disposal facility would impact plans and priorities in the nuclear energy R&D program.
- The President's Management Agenda (PMA) includes government-wide provisions on budget and performance integration that have been implemented through the Program Assessment and Rating Tool (PART). In addition, the PMA also introduced R&D Investment Criteria that were piloted in DOE's applied R&D programs. Please provide examples of how you prepared data under these requirements, how those data were used for budget and management decisions, and how these activities dovetail with the Government Performance and Results Act of 1993.
- Using the definitions in OMB Circular A-11, what is the proposed mix of funding in the fiscal year 2005 budget request between basic research, applied research, development, demonstration, and deployment activities for your office? Please provide the comparable fiscal year 2004 numbers.

#### **Questions for Mr. Glotfelty**

- Please discuss the needs that led to the establishment of GridWise and GridWorks.

- This year's budget shows a reduction in energy storage, down to \$4 million from \$9 million in fiscal years 2002, 2003, and 2004. Are there reasons for this decrease, other than significant earmarking in the account? Has the Department determined that there is a decreased potential for energy storage technologies to contribute to grid stability? How does this reduction interact with the likely contribution of intermittent sources (such as wind –the fastest growing power source on a percentage basis) that are being connected to the grid in response to state renewable portfolio standards?
- The President's Management Agenda (PMA) includes government-wide provisions on budget and performance integration that have been implemented through the Program Assessment and Rating Tool (PART). In addition, the PMA also introduced R&D Investment Criteria that were piloted in DOE's applied R&D programs. Please provide examples of how you prepared data under these requirements, how those data were used for budget and management decisions, and how these activities dovetail with the Government Performance and Results Act of 1993.
- Using the definitions in OMB Circular A-11, what is the proposed mix of funding in the fiscal year 2005 budget request between basic research, applied research, development, demonstration, and deployment activities for your office? Please provide the comparable fiscal year 2004 numbers for comparison.

## Appendix: Additional Budget Details

**Table 3.** DOE Civilian R&D Budget History and Details: Winner and Losers. *Pink denotes budget cuts, green, increases > 3%.*

	FY01 Actual	FY03 Actual	FY04 Enacted	FY05 Request	Amount Change		Percent Change	
					from FY01	from FY04	from FY01	from FY04
<b>Science</b>	3309	3322	3500	3432	122	-68	3.7%	-2.0%
HEP	697	702	734	737	40	4	5.7%	0.5%
NP	351	371	390	401	50	11	14.4%	2.9%
BER	554	494	641	502	-53	-140	-9.5%	-21.8%
BES	980	1002	1011	1064	84	53	8.6%	5.2%
ASCR	150	163	202	204	54	2	36.0%	1.0%
FES	241	241	263	264	23	2	9.5%	0.6%
O(1)	336	349	260	260	-77	0	-22.8%	-0.1%
<b>FE</b>								
FERD	471	611	673	636	165	-37	35.1%	-5.5%
CCT	-107	-47	-98	-140				
<b>EERE</b>	931	934	964	919	-12	-46	-1.3%	-4.7%
RE	312	322	357	375	63	17	20.1%	4.8%
EE (2)	619	612	607	544	-75	-63	-12.1%	-10.4%
NE (3)	238	258	293	300	23	7	8.3%	2.4%
<b>ETD</b>	56	88	81	91	35	10	62.3%	12.5%
<b>Total (4)</b>	<b>4,898</b>	<b>5,167</b>	<b>5,413</b>	<b>5,237</b>	<b>207</b>	<b>-97</b>	<b>6.9%</b>	<b>-3.3%</b>

Source: Department of Energy FY2005 Congressional Budget Request unless otherwise noted  
 (1) Includes Safeguards and Security (less reimbursable work), Workforce Development for Scientists and Teachers and small business set-asides.  
 (2) Weatherization (and other grants) subtracted--using FS&T numbers from Budget of the U.S. Government: Analytical Perspectives  
 (3) Does not include non-civilian nuclear activities  
 (4) Reflects adjustments made in PL 108-199 as reflected in H Rept. 108-401

### Key to Abbreviations

SC	Science
HEP	High Energy Physics
NP	Nuclear Physics
BER	Biological and Environmental Research
BES	Basic Energy Sciences
ASCR	Advanced Scientific Computing Research
FES	Fusion Energy Science
O	Other Science Programs
FE	Office of Fossil Energy
FERD	Fossil Energy Research and Development Account
CCT	Clean Coal Technology Account
EERE	Office of Fossil Energy
RE	Renewable Energy (in Energy Supply account)
EE	Energy Efficiency in Energy Conservation account
NE	Nuclear Energy Science and Technology (in Energy Supply account)
ETD	Electric Transmission and Distribution

**Table 4: Programmatic Effect Of Earmarks in EERE**

EERE budget simplified

By Program

Reductions in Pink. Hydrogen program in yellow

	FY03 Actual	FY04 Actual	FY04 Earmarks **	FY05 Request	\$ change FY04 Actual - 05 Request	% change FY04 Actual - 05 Request	\$ change FY04 Actual w/o earmarks to 05	% change FY04 Actual w/o earmarks to 05
Biomass	109,333	93,977	41,467	81,276	-12,701	-13.52%	28,766	54.78%
Building Technologies	65,899	59,866	265	58,284	-1,582	-2.64%	-1,317	-2.21%
Distributed Energy	60,054	61,023	1,000	53,080	-7,943	-13.02%	-6,943	-11.57%
Federal Energy Management Program	20,744	21,679		19,867	-1,812	-8.36%	-1,812	-8.36%
Geothermal technologies	28,390	25,508	1,961	25,800	292	1.14%	2,253	9.57%
Hydrogen and Fuel Cell Technologies	92,019	147,178	39,701	172,825	25,647	17.43%	65,348	60.80%
Industrial Technology	96,824	93,068		58,102	-34,966	-37.57%	-34,966	-37.57%
Solar Energy Technology	82,330	83,393	3,642	80,333	-3,060	-3.67%	582	0.73%
Vehicle Technologies*	174,171	178,002		156,656	-21,346	-11.99%	-21,346	-11.99%
Weatherization and Intergovernmental	328,604	323,332	6,050	380,067	56,735	17.55%	62,785	19.79%
Wind and Hydropower	46,656	46,215	1	47,600	1,385	3.00%	1,386	3.00%
All other	7,737	17,869	9,000	14,480	-3,389	-18.97%	5,611	63.27%
Program Direction (Supply)	12,615	12,364		20,711	8,347	67.51%	8,347	67.51%
Program Direction (Conservation)	76,950	85,004	3,500	81,664	-3,340	-3.93%	160	0.20%
Renewable energy subtotal (Supply)	322,150	370,494	105,803	374,812	4,318	1.17%	110,121	41.60%
Energy Efficiency subtotal (Conservation)	880,176	877,984	4,765	875,933	-2,051	-0.23%	2,714	0.31%
<b>EERE Subtotal</b>	<b>1,202,326</b>	<b>1,248,478</b>	<b>106,588</b>	<b>1,250,745</b>	<b>4,534</b>	<b>0.36%</b>	<b>108,855</b>	<b>9.53%</b>
Use of Prior Year Balances	0	-13,000		0	13,000	100.00%		
<b>Grand Total</b>	<b>1,202,326</b>	<b>1,235,478</b>	<b>106,588</b>	<b>1,250,745</b>	<b>22,068</b>	<b>1.79%</b>	<b>121,855</b>	<b>10.79%</b>

\* Includes some hydrogen funding, but hydrogen portions were not cut.

\*\*General reduction not applied.